2.2.2.6 In Band Transmission Spectrum

The average spectrum of a UAT message transmission modulated with pseudo-random payload data **shall** fall within the limits specified in Table 2-3 and Figure 2-2 when measured in a 100 kHz bandwidth.

Table 2-3: UAT Transmit Spectrum

Frequency Offset From Center	Required Attenuation from Maximum (dB)
All frequencies in the range 0 – 0.5 MHz	0
All frequencies in the range 0.5 – 1.0 MHz	Based on linear* interpolation between these points
1.0 MHz	18
All frequencies in the range 1.0 – 2.25 MHz	Based on linear* interpolation between these points
2.25 MHz	50
All frequencies in the range 2.25 – 3.25 MHz	Based on linear* interpolation between these points
3.25	60

** based on amplitude in dB and a linear frequency scale*

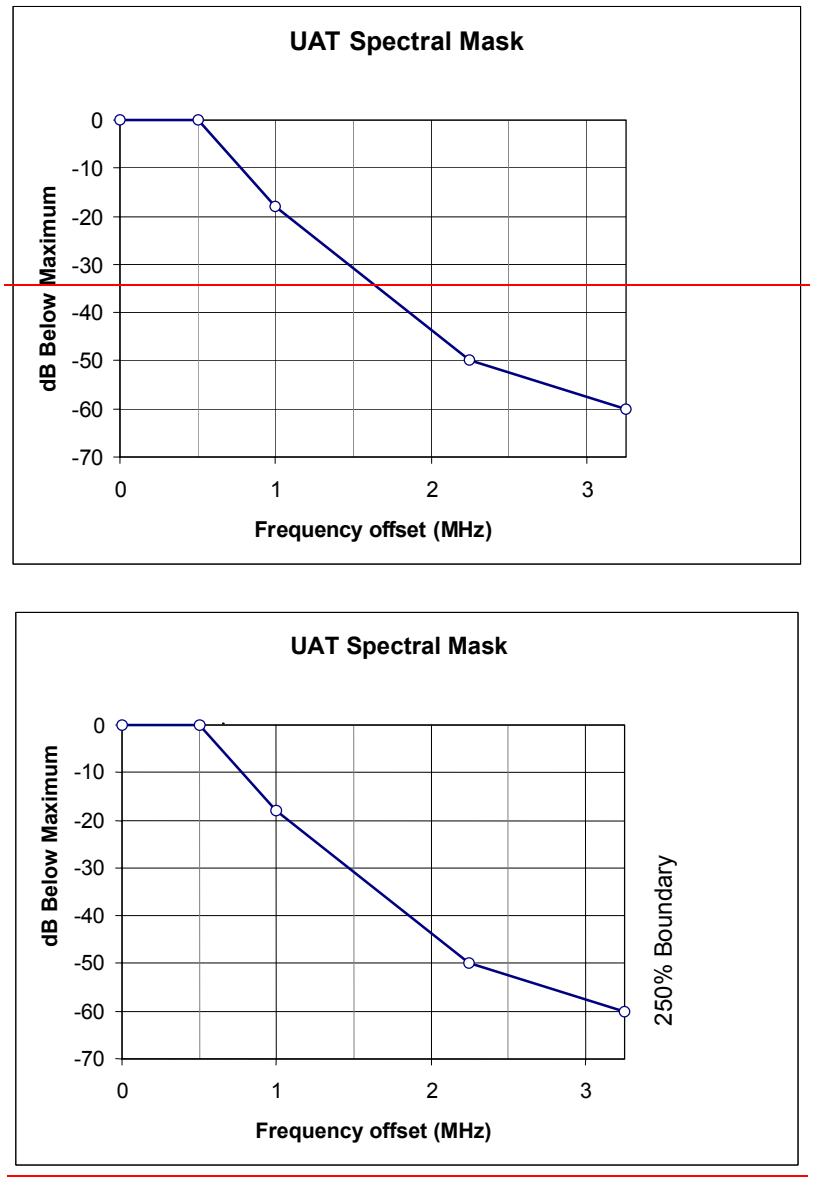

Figure 2-2: UAT Transmit Spectrum

~~***Note:*** *This requirement extends to 250% of the "occupied bandwidth," where the occupied bandwidth has been determined to be 1.3 MHz. Reference 47 CFR, §2.1.*~~

Notes:

1. *99% of the power of the UAT spectrum is contained in 1.3 MHz (+/- 0.65 MHz). This is roughly equivalent to the 20 dB bandwidth.*

2. *Spurious transmission requirements begin at +/- 250% of the 1.3 MHz value, therefore the transmit mask requirement extends to +/- 3.25 MHz.*

2.2.2.7 Out-of-Band Emissions

Out-of-Band emissions **shall** comply with applicable FCC regulations beyond 250% of the authorized bandwidth, that is, 3.25 MHz from the center frequency. Reference 47 CFR, §87.139.

2.2.3 Broadcast Message Characteristics

Subparagraphs 2.2.3.1 through §2.2.3.2.4 define the format for the ADS-B and the Ground Uplink Message types. Each of these messages types will normally occur in separate portions of the UAT frame as described in Section 1.

2.2.3.1 ADS-B Message Format

The ADS-B Message format is shown in Figure 2-3. Each message element is described in detail in §2.2.3.1.1 through §2.2.3.2.3.

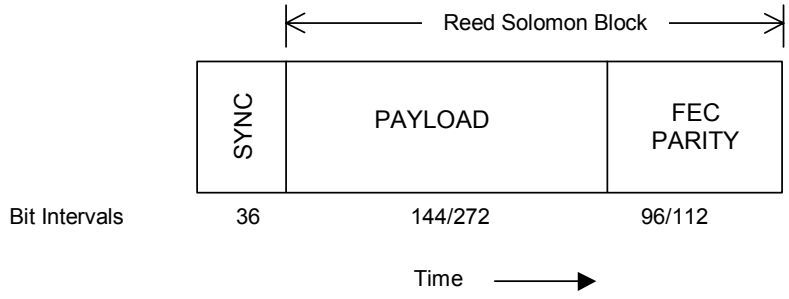

Figure 2-3: ADS-B Message Format

Notes:

1. *All bit intervals depicted in Figure 2-3 comprise the ACTIVE state of the transmitter as defined in §2.2.2.5.c.*

2. *Traffic Information Services-Broadcast (TIS-B) transmissions use the ADS-B Message format — including use of the same synchronization pattern. Therefore, there is actually no need for a "TIS-B message" and none is referred to in this MOPS.*